gabriel and associates

NALCO CHEMICAL COMPANY

ODESSA, TEXAS

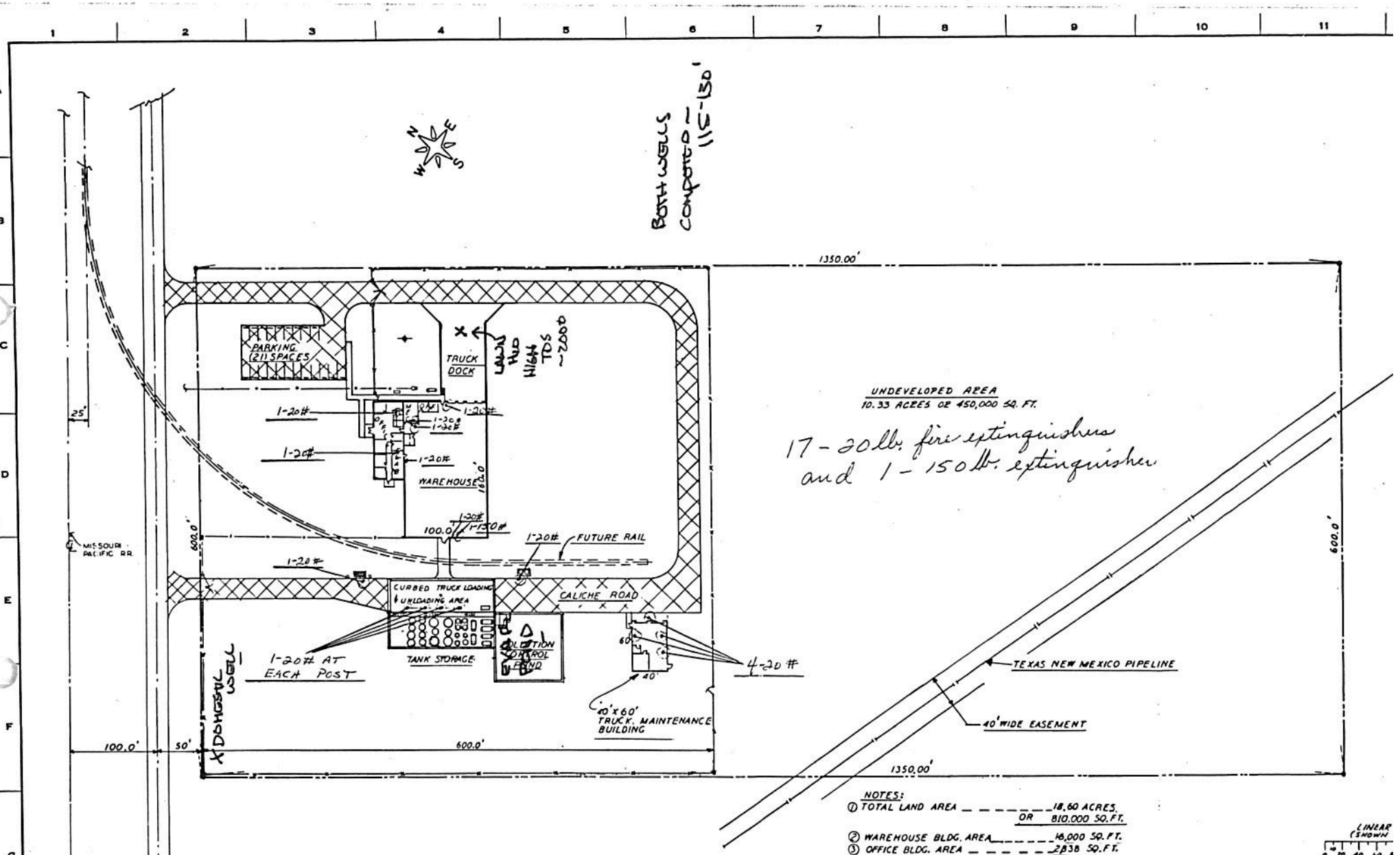
| | "E.P. Toxicity" Sediment from Evap. Pit Sample Date: Unknown |
|---|---|
| Arsenic | <0.1 mg/L |
| Barium | <0.5 mg/L |
| Cadmium | <0.1 mg/L |
| Chromium Total | <0.2 mg/L |
| Lead | <0.2 mg/L |
| Mercury | <0.001 mg/L |
| Selenium | <0.1 mg/L |
| Silver | <0.1 mg/L |

Analyses Certified by Steve Wolf

Steve Wolf - Manager
Laboratory Services

Date: December 9, 1982

1) Sample was provided by Nalco Chemical Co. personnel.
2) Analyses were performed according to Standard Methods, 15th Edition and EPA Test Methods for Evaluating Solid Wastes, SW-846, 1980.




NOTES:

| | | |
|---|---|---|
| ① | TOTAL LAND AREA | 18.60 ACRES, OR 810,000 SQ. FT. |
| ② | WAREHOUSE BLDG. AREA | 16,000 SQ. FT. |
| ③ | OFFICE BLDG. AREA | 2838 SQ. FT. |
| ④ | LAB ROOM AREA | 510 SQ. FT. |
| ⑤ | LOCKER ROOM AREA | 220 SQ. FT. |
| ⑥ | MECH. ROOM AREA | 420 SQ. FT. |
| ⑦ | SHIPPING OFFICE AREA | 322 SQ. FT. |
| ⑧ | TRUCK MAINTENANCE BLDG. | 2,400 SQ. FT. |
| ⑨ | TOTAL BUILDING AREA | 22,710 SQ. FT. |

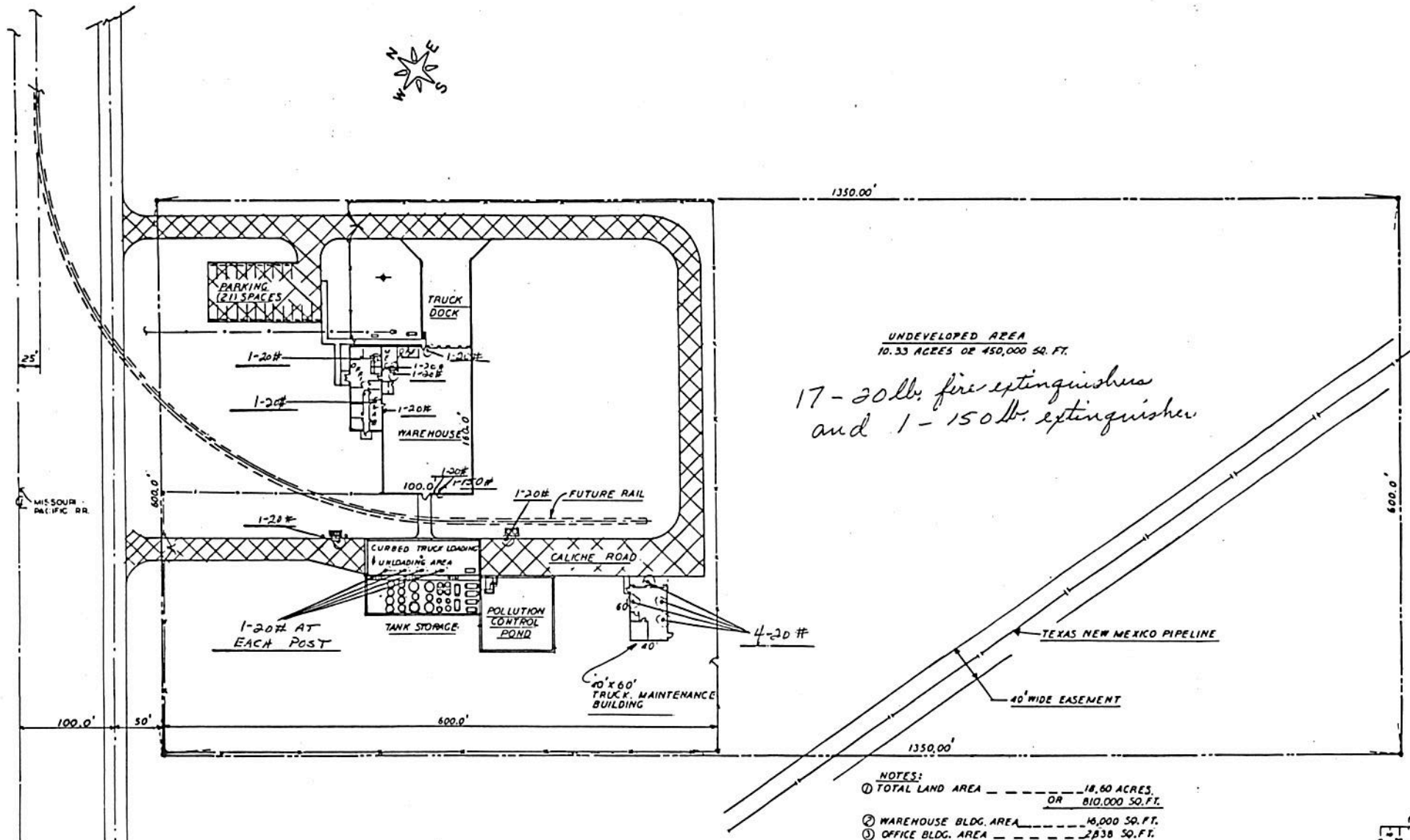
FIRE EXT. LOCATIONS

| NO. | DATE | BY | LOCATION | REVISION |
|---|---|---|---|---|
| 2 | 8-11-82 | E.E. | | DRAWING UPDATED |
| 1 | 11-30-78 | J.S.K. | F-5 | ADDED TRUCK MAINTENANCE BLDG. |

PLOT PLAN
ODESSA PLANT (14
ODESSA, TEXAS

NALCO CHEMICAL
2901 BUTTERFIELD ROAD • OA

DATE 12-14-76 | DRAWN J.S.K. | SCALE 1" = 50'-0"




NOTES:

| | | |
|---|---|---|
| ① | TOTAL LAND AREA | 18.60 ACRES, OR 810,000 SQ. FT. |
| ② | WAREHOUSE BLDG. AREA | 16,000 SQ. FT. |
| ③ | OFFICE BLDG. AREA | 2838 SQ. FT. |
| ④ | LAB ROOM AREA | 510 SQ. FT. |
| ⑤ | LOCKER ROOM AREA | 220 SQ. FT. |
| ⑥ | MECH. ROOM AREA | 420 SQ. FT. |
| ⑦ | SHIPPING-OFFICE AREA | 322 SQ. FT. |
| ⑧ | TRUCK MAINTENANCE BLDG. | 2,400 SQ FT. |
| ⑨ | TOTAL BUILDING AREA | 22,710 SQ FT |

| NO. | DATE | BY | LOCATION | REVISION |
|---|---|---|---|---|
| 2 | 12-19-76 | E.P. | | DRAWING UPDATED |
| 1 | 11-1-76 | J.S.F. | P-1 | ADDED TRUCK MAINTENANCE BLDG |

PLOT PLAN
ODESSA PLANT
ODESSA, TEXAS

NALCO CHEMICAL
2901 BUTTERFIELD ROAD

DATE 12-14-76 | DRAWN J.S.K. | SCALE 1" = 50'-0"

**gabriel and associates**
environmental consultants

**1814 north marshfield**
**chicago, illinois 60622**
**(312) 486-2123**

December 9, 1982

Nalco Chemical Co.
Route 1 Box 213F
Odessa, Texas 79760

Attention: Mr. R.H. Howard

Subject: "E.P. Toxicity" Test Results

Dear Mr. Howard:

Per verbal instructions of Mr. Karsten Odland of your Corporate offices, enclosed herein are the results of an "E.P. Toxicity" Test performed on sample submitted to our laboratory for examination.

If you have questions concerning the results or test procedures, do not hesitate to contact us at (312) 486-2123.

Respectfully yours,

Frank J. Pokorny
Registered Professional Engineer

Associate
Gabriel and Associates

FJP/js

cc: Mr. Karsten Odland
Nalco Chemical

ROUTE TO

**NALCO MEMO to:** K. Odland

FROM E. S. Littmann

DATE December 1, 1982

COPIES TO R. K. Gabel
R. Howard

SUBJECT Flash Point of EPA Pit
Odessa, Texas

Ronnie Howard submitted a sample from the subject pit which was undated. A PMCC flash point was determined using a computerized device which meets all of the pertinent regulations. The sample flashed at 49°C (120°F).

E. S. Littmann

ESL/dg

FORM NO. 71

JONES AND NEUSE, INC.
Consulting Engineers

Engineering — Planning — Project Management

AUSTIN — HOUSTON — BELTON

September 5, 1985

Mr. Larry Soward
Executive Director
Texas Water Commission
P.O. Box 13087, Capitol Station
Austin, Texas 78711

Attention: Byran Dixon
Solid & Hazardous Waste Division

Re: National Chromium Corporation - Closure Plan
Solid Waste Registration No. 31733
JN #107401

Dear Mr. Soward:

Enclosed herein is a Closure Plan for an inactive surface impoundment, percolation field, and contaminated soils at the above referenced facility. Since these facilities were not utilized after July 26, 1982, the intent of this plan is closure by complete removal of all hazardous wastes in accordance with TAC 335.211 - .220 and 335.286.

If you have any questions in regard to this plan, please do no hesistate to contact me at 512/327-9840.

Sincerely,

JONES AND NEUSE, INC.

Michael Dick

Michael Dick
Project Manager

MD/pr

cc: Bill Masterson, Jr.
Grant Gurley

2525 Wallingwood, Suite 600 Austin, Texas 78746 512-327-9840

# CLOSURE PLAN FOR
# NATIONAL CHROMIUM CORPORATION
# SOLID WASTE REGISTRATION NO. 31733

SEPTEMBER, 1985

JONES AND NEUSE, INC.
Engineering and Environmental Consultants
Austin-Houston-Belton

D85042
JN 107401

TABLE OF CONTENTS

# I. SUMMARY

# I. SUMMARY

National Chromium Corporation was formed in 1979 to serve the west Texas area as an industrial hard chrome plating facility. In the same year the company installed a chromium reduction system which initially utilized a percolation field for treated wastewater disposal. A 60 ml hypalon lined surface impoundment was later installed when it became apparent that the system was not treating hexavalent chromium to design criteria. According to National Chromium personnel, neither the impoundment nor the percolation field were utilized after July 26, 1982.

The following eight phase approach will be utilized to complete the closure.

1. Disposal of liquids in disposal well.

2. Air drying and solidification of sludges.

3. Removal of sludges, synthetic liner, and any contaminated soils.

4. Analytical verification of impoundment bottom and sidewalls.

5. Removal of all visually contaminated soils from the percolation field, spill areas, and waste pile.

6. Boring progam to determine what areas need further remediation.

7. Backfill and grading.

8. Closure Certification.

# II. REGIONAL GEOLOGY AND HYDROGEOLOGY

## II. REGIONAL GEOLOGY AND HYDROGEOLOGY

### A. General Geology

The geological formations that outcrop in the Ector County area near Odessa, Texas range in age from Cretaceous to Recent. Table 1 is a generalized breakdown of the principal geologic subdivisions, their chief composition, and water-bearing properties. Attachment 1 is a copy of the Bureau of Economic Geology's "Geologic Atlas of Texas - Pecos Sheet." It shows a detailed distribution of the geology in the Odessa, Texas area along with detailed discussions.

Ector County lies in the southern part of the large structural Permian Basin or geosyncline that covers much of western Texas, eastern New Mexico, and parts of Kansas and Oklahoma. A south-trending structural "high" called the Central Basin Platform, lies in the southern part of the basin. This platform which has a width of 30 to 35 miles and a length of at least 150 miles, divides the southern Permian Basin into sub-basins, the Delaware Basin to the west and the Midland Basin to the east. Ector County lies in the extreme western part of the Midland Basin. The rocks of Cretaceous age and younger are nearly flat, but the older rocks show complex structural features at depth.

The sources for potable ground-water all lie above the Permian rocks.[1]

### B. Geologic History and Regional Structure

Pre-Permian Period (290 + my) - During the interval of time prior to the Permian Period, the regional area around Ector county underwent a continuing series of erosion and deposition caused, in part by the tetonically active Llano uplift area. During most of this time, the area remained under deep to shallow epi-continental seas with the periodic appearances of islands especially during

the Pennsylvanian Period. During the Pennsylvanian Period, the Llano area once again experienced uplift caused by the initial westward tilting toward the Midland basin. This tilting continued through the Permian and Triassic Periods resulting in a deepening of the epi-continental sea in the Ector County area. Alternate advance and retreat of shorelines near the end of the Pennsylvanian produced sand, limestone and shale beds on the Concho shelf which in turn began a long period of deposition into the Midland basin in the Ector County area.

Permian Period (240 - 290 my) - Little regional tectonic movement was experience during the early Permian, except for the continual tilting toward the Midland Basin. This tilting caused the shoreline to migrate westward. Relatively unstable near-shore conditions existed along the eastern margin of the Midland basin while reef masses were building on parts of the shelf platform. This instability created conditions favorable for the depositing of thick sediment packages of salt, anhydrite, and shale (red beds) that we now see in the basin area in Ector County.

Triassic Period (205 - 240 my) - As the Permian sea retreated from the Midland basin, erosion and local tectonic folding followed; thus, separating the Permian formations from subsequent sediments by an extensive regional unconformity. Although erosion was regionally widespread, the amount of Permian sediment removed is thought not to have been great. In the late Triassic time, considerable uplift to the east initiated deposition of sands, conglomerates, and shales (redbeds) which were spread across the erosional face of the Permian sediments. These deposited sediments are what comprise the Dockun Group in the Odessa, Texas area.

Cretaceous Period (63 to 205 my) - Triassic age sediments were subject to erosion and reworking during the early Cretaceous Period resulting in a nearly flat or broadly undulating plain. It was over this surface that the last epi-continental sea advanced northwestward from the Gulf across Texas. During

most of Cretaceous time, the sea advanced inland. The sea then began retreating by stages of advance and retreat. It was during this cyclic retreat that the caliche, sandy clay, and sands of the present day Ogallala formation were deposited.

Quaternary Period (Present to 63 my)[2] - With the higher areas of eastern New Mexico and the Edwards Palteau above sea level, erosion began attacking the area around the Central Basin Platform and Midland Basin, depositing alluvium sediments on the Midland basin. These alluvian deposits are in the form of fluvial terraces and flood-plain sediment as well as fine-grain windblown sediment. The action of wind-scouring has created large numbers of Playas in the Odessa area which allow rain and run-off to be trapped and ultimately recharged to the groundwater. Locally, in the Odessa, Texas area, the sediments consist predominately of windblown sands and silts with hundreds of Playas scattered across its surface.

C. Groundwater Production in Ector County

West of Concho Bluff only meager supplies of groundwater are available. The saturated part of the Quaternary alluvium is thin and small yields are found. The water in the alluvium is moderate to highly mineralized. Wells drawing from the underlying Triassic rocks in this area are deep (430 - 710 feet), small producers (due to low permeability) and have moderately to highly mineralized water.

East of Concho Bluff, in the area around and including the city of Odessa, Texas, the principal water-bearing formation is the sand of the Trinity group. The overlying limestone of the Fredricksberg group and the Ogallala formation of Tertiary age probably are not saturated except along the draws were the depth to water is slight. The base of the Trinity group is no more than 200 feet below ground surface in the area around Odessa, Texas. The saturated section of the sand is thin along Concho Bluff but thickens to the east where it is at its thickest, north and east of Odessa, Texas.

D. Local Well

National Chrome is located at 2628 Stephens Road in Odessa, Texas. Adjacent to the site on Stephens Road is a production well of approximately 175 -feet in depth, producing water from the Trinity sands. Analysis completed on the well's water, sampled on May 3, 1983 showed a Total Chromium value of < 0.02 ppm indicating that National Chrome's operation has had no effect on that part of the saturated sands supplying this well.

WATER BEARING FORMATIONS IN ECTOR COUNTY, TEXAS

TABLE 1

| System | Subdivision | Character of Rocks | Thickness (ft.) | Water Supply |
|---|---|---|---|---|
| Quaternary | Pleistocene and Recent | Caliche, sand, gravel and clay | 0 - 125 | Small quantity fresh water |
| Tertiary | Pliocene (Ogallala Fm) | Caliche, sandy clay | 0 - 60 | Moderate quantities of fresh water |
| Cretaceous | Fredericksberg Group | Clay, limestone, and sand conglomerates | 0 - 75 | d.o. |
| | Trinity Group | Clay, fine to medium sand and gravel | 0 - 125 | Large volumes of fresh water |
| Triassic | Dockum Group | Red shale interbedded with sandstone and conglomerate | 700 - 1600 | Highly mineralized water |
| Permian | Undifferen-tiated | Halite, Anhydrite, red shale, sandstone, lime-stone and conglomerate | 5000 + | No wells draw water from these these formations, highly mineralized water. |

## REFERENCES


1. Walker, Lloyd E., Occurrence, Availability, and Chemical Quality of Ground Water in the Edwards Plateau Region of Texas; 1979. Rpt. 235 - Texas Department of Water Resources

2. Bureau of Economic Geology, Geologic Atlas of Texas - Pecos Sheet, 1976. The University of Texas at Austin.

3. Knowles, D.B. - Ground-Water Resources of Ector County, Texas; 1952, Bulletin 5210 - Texas Board of Water Engineers

# III. LIQUID REMOVAL

## III. LIQUID REMOVAL

The only liquids which will require disposal are contaminated rainwaters which have accumulated in the surface impoundment. These liquids will be deep well injected at CESCOS International, Inc., facility in Odessa, Texas.

The impoundment is 30' x 30' x 3', therefore, the maximum amount of liquids for disposal will be 21,168 gallons. In August of 1985, the liquid level was 1.2 feet, therefore 8,467 gallons is probably a more realistic estimate on disposal volumes considering rainfall conditions in this area.

Analytical results from samples collected by the Texas Water Commission are as follows:

| | | |
|---|---|---|
| 2/82 | Total Chromium | 62,000 ppm |
| 5/83 | Total Chromium | 35,000 ppm |
| 5/83 | Hexavalent Chromium | 25,000 ppm |

# IV. SOLIDS REMOVAL

## IV. SOLIDS REMOVAL

### A. Surface Impoundment

All sludges, liners, and visually contaminated soils (yellow stained) will be excavated, manifested, and transported to an authorized Class I Disposal Site. At this time, National Chromium is seeking bids from disposal companies and will forward the exact location of disposal following the selection of a disposal company.

The impoundment is 30' x 30' x 3', assuming that the liner has not leaked and there are four inches of sludge (measured in August, 1985), 11 cubic yards of material will have to be disposed (this does not include the liner or solidification if necessary). The impoundment is surrounded by a 3 foot dike which is covered with a 60 ml hypalon liner anchored at its base. The dike material is not expected to be contaminated and will be visually checked for stained soils.

### B. Percolation Field, and Spill Areas

All visually contaminated soils (yellow stained) will be excavated and disposed at an authorized Class I disposal site. This will occur at the same time that impoundment solids are excavated and disposed. Analytical results from sample collected by the Texas Water Commission are as follows:

| | | | |
|---|---|---|---|
| 00/79 | Water from Outfall | Total Chromium | 2.2 ppm |
| 02/82 | Percolation Field | Total Chromium | 18.0 ppm |
| 05/83 | Percolation Field | E.P. Toxicity (Total) | 50.4 ppm |
| 05/83 | Percolation Field | E.P. Toxicity (Hexavalent) | 50.6 ppm |

### C. Waste Pile

The waste pile is approximately 60 feet long, 18 feet wide, and 4.5 feet in height which calculates to 90 cubic yards of material which will be excavated

and disposed. Analytical results from samples collected by the Texas Water Commission are as follows:

| | | |
|---|---|---|
| 05/83 | E.P. Toxicity (Total) | 378 ppm |
| | E.P. Toxicity (Hexavalent) | 357 ppm |

# V. ANALYTICAL VERIFICATION

## V. ANALYTICAL VERIFICATION

### A. Surface Impoundment

Following removal of sludges, liner, and any visually contaminated soils, composite soil samples will be collected from the pond bottom and side walls. These samples will be split with the Texas Water Commission and analyzed for total and E.P. Toxic chromium (it is presumed that the majority of any chromium detected will be in the hexavalent state).

If analyses reveal that hazardous waste remain, further excavation and disposal will be initiated following a core program to determine depth of contamination.

If analyses reveal that no hazardous waste remain, then the company will petition the Texas Waster Commission for one of the following options.

1. Classification of the material to determine disposal alternatives.

2. In place closure involving deed recordation.

3. Verficiation by comparison with background concentration that complete removal was accomplished.

### B. Percolation Field, Waste Pile, Spill Areas, and Core Sample Program

Following removal of all visually contaminated soils (yellow stained) and the waste pile, individual samples will be collected from these areas. Samples will be split with the Texas Water Commission and analyzed for total and E.P. Toxic chromium.

Additionally, a coring program will be initiated to assess the horizontal and vertical extent of chromium contamination in the entire percolation field. This program will also include the collection of background samples.

The percolation field is approximately 9 feet by 66 feet. This 594 square foot area will be marked in 75 square foot grids to obtain representative samples. Composite surface and 6-12 inch depth samples will be collected and analyzed for total chromium from each grid. The surface samples will be analyzed first and depth samples held in the laboratory until review with the Texas Water Commission of the surface analyses. The grid system will be left intact until all closure activities are completed.

Following review of analyses, the company will petition the Texas Water Commission for one of the options outlined for non hazardous waste outlined under Section V A (Surface Impoundments). This concept assumes that if soils are not visibly stained, they will not leach chromium in excess of E.P. Toxic criteria. This assumption will be verified analytically before commencement of the program.

C. Backfilling and Grading

Once the Texas Water Commission has verified the closure, the impoundment will be back filled with native soils and the entire site graded to natural elevations.

# VI. SAFETY AND DECONTAMINATION OF EQUIPMENT

## VI. SAFETY AND DECONTAMINATION OF EQUIPMENT

All safety concerns and decontamination of equipment utilized to dispose of hazardous waste will be the responsibility of the disposal company selected by competitive bids.

All safety and equipment decontamination involving Class II Wastes will be the responsbility of the company. Level D safety gear will be utilized and consists of:

- Coveralls, cotton
- Safety boots
- Safety glasses
- Hard hat
- Access to a respirator

All equipment will be steamed cleaned over a 30 ml plastic sheet and rinsate water will be collected and pumped to the facilities wastewater treatment system.

# VII. CLOSURE CERTIFICATION

## VII. CLOSURE CERTIFICATION

In accordance with TAC 335.219, all closure activities will be certified by National Chromium Corporation and a registered professional engineer with Jones and Neuse, Inc.

# VIII. TIME SCHEDULE

| ITEM | K | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| LIQUID REMOVAL | | | | | | | | | |
| SOLID REMOVAL | | | | | | | | | |
| ANALYTICAL VERIFIC AND FURTHER REMEDIATION IF NE | | | | | | | | | |
| CORE SAMPLING PROG AND FURTHER REMEDIATION IF NEC | | | | | | | | | |
| BACKFILL AND GRADE | | | | | | | | | |
| CLOSURE CERTIFICAT | | | | | | | | | |

# IX. ESTIMATED COSTS

## IX. ESTIMATED COSTS

The estimated cost for disposal of solids and liquids from the surface impoundment and the waste pile is $24,334. This price does not include labor costs and solidification of solids if necessary. Costs were not projected for the percolation field and spill areas.

Liquids

21,168 gallons @ 0.20/gal. = $4,234

Solids

| | |
|---|---|
| 101 cubic yards @ $80.00/cu.yd. | $8,080 |
| 6 loads @ $1,325 per load | 7,950 |
| 6 liners @ $65 per liner | 390 |
| | $16,420 |

Laboratory Analysis

| | |
|---|---|
| E.P. Toxicity - 10 samples @ $30 ea. | $300 |
| Total Chromium - 29 samples @ $10 ea. | 290 |
| | $590 |

Closure Certification

| | |
|---|---|
| P.E. | $3,000 |

# APPENDIX A

## GEOLOGIC ATLAS OF TEXAS - PECOS SHEET

| ITEM | W | E | E | K | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| LIQUID REMOVAL | ▓ | ▓ | ▓ | ▓ | | | | | | | | | | | | | | | | | | | | |
| SOLID REMOVAL | | | | ▓ | ▓ | | | | | | | | | | | | | | | | | | | |
| ANALYTICAL VERIFICATION AND FURTHER REMEDIATION IF NECESSARY | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | | | | | | | | | | | | |
| CORE SAMPLING PROGRAM AND FURTHER REMEDIATION IF NECESSARY | | | | | | | | | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | | | | | |
| BACKFILL AND GRADE | | | | | | | | | | | | | | | | | | | | ▓ | ▓ | | | |
| CLOSURE CERTIFICATION | | | | | | | | | | | | | | | | | | | | | | ▓ | ▓ | ▓ |

# VIII

# TIME SCHEDULE

File II A6

ATTACHMENT III

LOSS OF INTERIM STATUS
REGION VI EPA
R06-01-06

1. Reviewer: AA

2. Facility name: NATIONAL CHROMIUM CORP

3. Address/location: ODESSA IND PARK
BOX 4401
ODESSA, TX 79760

4. EPA I.D. No.: TXD 095211777

5. Type of RCRA units requiring certification:

| | | | |
|---|---|---|---|
| A. | SURFACE IMPOUNDMENT | H. | |
| B. | LAND TREATMENT - | I. | |
| C. | SPRAY IRRIGATION SYSTEM | J. | |
| D. | | K. | |
| E. | | L. | |
| F. | | M. | |
| G. | | N. | |

| | Yes | No | Not Determined |
|---|---|---|---|
| 6. Is groundwater certification required? If yes, continue to Question 7. If no, go to Question 22. | ☐ | ☒ | ☐ |
| 7. Is financial assurance certification required? If yes, continue to Question 8. If no, go to Question 22. | ☐ | ☒ | ☐ |

| | Yes | No | Not Determined |
|---|---|---|---|
| 8. Was groundwater certification submitted? If yes, continue to Question 9. If no, answer Questions 9, 10, 11, and 12, and go to Question 20. | ☐ | ☐ | ☐ |
| 9. Was financial assurance certification submitted? If yes, continue to Question 10. If no, answer Questions 10, 11, and 12 and go to Question 20. | ☐ | ☐ | ☐ |
| 10. Is signature adequate? If yes, continue to Question 11. If no, answer Questions 11 and 12 and go to Question 22. | ☐ | ☐ | ☐ |

11. Documentation available?

| | | | | | |
|---|---|---|---|---|---|
| a. Part A Submittal - Date: _____ | ☐ | ☐ | ☐ |
| b. Part B Submittal - Date: _____ | ☐ | ☐ | ☐ |
| c. Topographic Map - | ☐ | ☐ | ☐ |
| d. Section 3007 Response - Date: NOV 15, 1985, DATE OF THE LETTER | ☐ | ☐ | ☐ |
| e. Closure Plan - Date: _____ | ☐ | ☐ | ☐ |
| f. Post-Closure Plan- Date: _____ | ☐ | ☐ | ☐ |
| g. RCRA Inspection - Date: _____ | ☐ | ☐ | ☐ |
| h. Other - | | | |
| i. Certification Date: _____ (Signed) | | | |
| ii. _____ Date: _____ | | | |
| iii. _____ Date: _____ | | | |
| iv. _____ Date: _____ | | | |
| v. _____ Date: _____ | | | |

(Received) _____

| | | | |
|---|---|---|---|
| 12. Do all documents listed in Question 11 agree with the information shown in Question 5? If yes, continue to Question 13. If no, go to Question 22 and check with Project Manager before continuing with questionnaire. | ☐ | ☐ | ☐ |
| 13. Does groundwater certification properly address all units listed in Question 5? If yes, continue to Question 14. If no, go to Question 22. | ☐ | ☐ | ☐ |

| | Yes | No | Not Determined |
|---|---|---|---|
| 14. Does financial assurance certification (insurance and closure/post-closure) properly address all units listed in Question 5? If yes, continue to Question 15. If no, go to Question 22. | ☐ | ☐ | ☐ |
| 15. Does insurance address both sudden and non-sudden occurrences? If yes, continue to Question 16. If no, go to Question 22. | ☐ | ☐ | ☐ |

16. Which of the following options were used to demonstrate financial assurance for closure? Note: check yes for the appropriate method - it is not necessary to check No for those which do not apply.

| | Closure Cost | Insurance Part B | Available |
|---|---|---|---|
| a. Closure trust fund: | ☐ | ☐ | ☐ |
| b. Surety bond guaranteeing payment into a closure trust fund: | ☐ | ☐ | ☐ |
| c. Surety bond guaranteeing performance: | ☐ | ☐ | ☐ |
| d. Closure letter of credit: | ☐ | ☐ | ☐ |
| e. Closure insurance: | ☐ | ☐ | ☐ |
| f. Financial test/corporate guarantee: | ☐ | ☐ | ☐ |
| g. Multiple financial mechanisms: | ☐ | ☐ | ☐ |

17. Which of the following options were used to demonstrate financial assurance for post-closure? Note: Check yes for the appropriate method - it is not necessary to check no for those which do not apply.

| | Post Closure Cost | Insurance Part B | Available |
|---|---|---|---|

| | Yes | No | Not Determined |
|---|---|---|---|
| a. Post-closure trust fund: | ☐ | ☐ | ☐ |
| b. Surety bond guaranteeing payment into a post-closure trust fund: | ☐ | ☐ | ☐ |
| c. Surety bond guaranteeing performance: | ☐ | ☐ | ☐ |
| d. Post-closure letter of credit: | ☐ | ☐ | ☐ |
| e. Insurance: | ☐ | ☐ | ☐ |
| f. Financial test/corporate guarantee: | ☐ | ☐ | ☐ |
| g. Multiple financial mechanisms: | ☐ | ☐ | ☐ |
| 18. Is GROUNDWATER certification considered complete? If no, explain in Question 22. | ☐ | ☐ | ☐ |
| 19. Is financial assurance considered complete? If no, explain in Question 22. | ☐ | ☐ | ☐ |
| 20. If the answer to Questions 8, 9, 18, or 19 is no, was a closure plan submitted? If yes, continue to Question 21. If no, go to Question 22. | ☐ | ☐ | ☐ |
| 21. If the answer to Questions 8, 9, 18, or 19 is no, was a post-closure plan submitted? | ☐ | ☐ | ☐ |

22. Briefly discuss the problems or discrepancies identified and determine if they are of a nature which prevents further review.

FROM 6 ; CLOSURE PLAN PROPOSED

ROUTE TO:

**NALCO MEMO to:** Karsten Odland

LOCATION: Oak Brook

FROM: E. S. Littmann

DATE: August 19, 1985

COPIES TO: P. B. Brower
V. L. Seale

SUBJECT: Tests on Water from Odessa, Texas Facility

Per your request we have examined a sample of water from the subject pond and the results are listed below:

| | |
|---|---|
| pH (Neat) | = 3.9 |
| Flash Point (PMCC) | = $>200^{\circ}F$ (flame-out at $160^{\circ}F$) |
| Oil-in-water | = 662 mg/l |
| Total organic carbon | = 1899.5 mg/l |
| COD | = 4200 mg/l |

E. S. Littmann
Environmental Standards
Coordinator

ESL/mjg

FORM 71

VINSON & ELKINS
ATTORNEYS AT LAW
FIRST CITY CENTRE
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October 21, 1986

U. S. Environmental Protection
Agency Region VI
Interfirst Two Building
1201 Elm Street
Dallas, Texas 75270

Attn: Ms. Carla S. Nelson

Re: Nalco Chemical Company
RCRA Docket No. VI-508-H

Gentlemen:

By our letter of October 17, 1986, we forwarded analytical results of soil analyses conducted pursuant to Paragraph 4 of the compliance schedule of the May 30, 1986 consent agreement entered between the United States Environmental Protection Agency and Nalco Chemical Company in the above referenced matter. In that letter, the analytical results incorrectly were identified as "representative samples taken of sludge, sediment accumulated in the bottom of the surface impoundment and of soil underlying the surface impoundment." The analyses were only of the soil underlying the surface impoundment and did not include sludge or sediment accumulated in the bottom of the impoundment.

We regret the error. If you have any questions regarding the analyses, please call Leo Domzalski at (312) 961-9500, extension 1284.

Sincerely,

Jeff Civins

Jeff Civins

JC:sg
cc: Leo Domzalski

VINSON & ELKINS
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Attn: Ms. Carla S. Nelson

Carla S. Nelson

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October 17, 1986

U. S. EPA Region VI
Interfirst II Building
1201 Elm Street
Dallas, Texas 75270

Attn: Ms. Carla S. Nelson

Re: Nalco Chemical Company
RCRA Docket No. VI-508-H

Gentlemen:

Pursuant to paragraph 4 of the compliance schedule of the May 30, 1986 consent agreement entered between the United States Environmental Protection Agency and Nalco Chemical Company in the referenced matter, enclosed are copies of the analytical results of representative samples taken of sludge, sediment accumulated in the bottom of the surface impoundment, and of soil underlying the surface impoundment.

The report with the sample identifier 0-10" is an analysis of the control sample taken from an inactive area of the Odessa facility 0 to 10 inches below the surface. The report identified as 10-20" is the analysis of the sample taken 10 to 20 inches below the bottom of the concrete impoundment in the north corner of the impoundment. The concrete is approximately 6 inches thick so the sample represents soil 4 to 14 inches below the surface. The report labeled 20-30" is an analysis of soil samples from 20 to 30 inches below the surface of the impoundment, same location.

Under separate cover, these analyses have been forwarded to the Texas Water Commission.

If you have any questions regarding the analyses, please call Leo Domzalski at (312) 961-9500, extension 1284.

Sincerely,

Jeff Civins

Jeff Civins

JC:sg
Enclosures
cc: Larry Soward
Audrone Karalius
Leo Domzalski

COMPUCHEM LABORATORIES

October 1, 1986

Mr. Odland Karstan
Nalco Chemical
1 Nalco Center
Naperville, IL 60566-1024

Dear MR. Karstan:

We at CompuChem® are pleased to provide our report for the analysis you requested. Data for the following sample are enclosed:

| Your ID Number | Our ID Number | Analysis Code | Order Number | Description of Work Requested | Report Format |
|---|---|---|---|---|---|
| 0-10" | 100331 | 043 | 9250 | Base/Neutral | Silver |

In this report we have included the analytical results, the method reference, and the quality control summary. If any anomalies were encountered in this analysis, they would be referenced in an attached Quality Assurance Notice(s). Instrument documentation is provided with reports purchased in our Gold Report format.

To obtain additional technical information concerning this report, please contact your Sales Representative. In addition to resolving your questions, they can provide you with a complete overview of our line of services and assist you in identifying those services which will effectively and efficiently support your monitoring program.

For your convenience, your Customer Service Representative can help you place a new order, obtain information about a sample's status or obtain assistance with sample logistics. Your Sales Representative and your Customer Service Representative can be reached at 1/919-549-8263.

Thank you for choosing CompuChem®. We would like to continue providing you analytical support and services. We would appreciate your comments regarding the quality of services you have received from CompuChem®; client satisfaction is important to us. Please address your comments to Mr. Kevin McConnaghy, Vice-President of Marketing, at the address given below.

Sincerely,

Mary E. Mitchell
Supervisor, Report Deliverables

cc: Accounting
(Cover letter only)

COMPUCHEM
LABORATORIES

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*These notices are included where appropriate for data qualification.

**When the original chain of custody is submitted with the sample(s), a copy of it is included with the report.

COMPUCHEM LABORATORIES

ANALYTICAL REPORT OF DATA
SUBMITTED TO:

Mr. Odland Karstan
Nalco Chemical
1 Nalco Center
Naperville, IL 60566-1024

CHRONICLE

| ITEM NO. | SAMPLE IDENTIFIER | COMPUCHEM® NUMBER | DATE SAMPLE RECEIVED | DATE SAMPLE EXTRACTED | DATE BASE/NEUTRAL FRACTION ANALYZED |
|---|---|---|---|---|---|
| 1. | 0-10" | 100331 | 09/09/86 | 09/11/86 | 09/16/86 |

## METHOD REFERENCE

For the initial sample preparation, CompuChem employs a modification of the current EPA Contract Laboratory Program (CLP) procedure for the Determination of Low Levels of Semivolatile Organics in Soil and Sediments. Further sample preparation, specifically the extract partitioning technique, is taken from the second edition of "The Test Methods For Evaluating Solid Waste", SW-846. Analysis for the acid and base/neutral priority pollutants is performed in accordance with USEPA Method 625 Volume 49, October 26, 1984.

### Method Summary

A nominal amount of sample, approximately 30 grams, is mixed with (anhydrous) sodium sulfate and serially extracted with a 50/50 mixture of methylene chloride and acetone using sonication. The solvent extract is then concentrated and partitioned into seperate base/neutral and acid extracts. The base/neutral extract is generated by washing the solvent extract with a basic (pH greater than 11) water wash which removes the acid constituents from the organic extract. The organic extract, now containing only base/neutral compounds, is then dried and concentrated. The pH of the aqueous basic wash is adjusted to less than 2 and serially extracted with methylene chloride. The methylene chloride containing the acid compounds is dried and concentrated.

Qualitative identification is performed using the retention time and the relative abundance of three characteristic ions. Quantitative analysis is performed using either external or internal standard techniques.

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLES

SAMPLE IDENTIFIER: 0-10"
COMPUCHEM® SAMPLE NUMBER: 100331

| | | CONCENTRATION (UG/KG) | DETECTION LIMIT (UG/KG) |
|---|---|---|---|
| 1B. | NAPHTHALENE | BDL | 330 |
| 2B. | ACENAPHTHYLENE | BDL | 330 |
| 3B. | FLUORENE | BDL | 330 |
| 4B. | PHENANTHRENE | BDL | 330 |
| 5B. | DI-N-BUTYLPHTHALATE | BDL | 330 |

Surrogates Recoveries - Introduced at the beginning of the extraction, surrogate standards are deuterated and/or select compounds that analytically mimic the response of certain analytes. Known concentrations of these surrogates are added to the sample and a percent recovery is calculated. This recovery acts as a barometer of extraction efficiency and analytical response for the individual sample.

| | %Recovery | Control Range% |
|---|---|---|
| $D_5$-Nitrobenzene | 82 | (20-140) |
| 2-Fluorobiphenyl | 111 | (20-140) |
| $D_{14}$-Terphenyl | 85 | (20-150) |
| $D_{10}$-Pyrene* | 97 | * |

BDL=BELOW DETECTION LIMIT
*Advisory Surrogate; therefore no control range

## QUALITY CONTROL SUMMARY

SAMPLE IDENTIFIER: 0-10"
COMPUCHEM® SAMPLE NUMBER: 100331

BASE/NEUTRAL

| | NUMBER | ACCEPTANCE CRITERIA |
|---|---|---|
| Blank | 101011 | OK |
| Sample Spike | 99884 | OK |
| DFTPP* | DG860915B07 | OK |
| Shift Standard | BT860915B07 | OK |

*The tuning calibration compound, Decafluorotriphenylphosphine, is used for the base/neutral instruments.